



**ATTORNEY DOCKET NO. 13172.0014U2**  
**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of

Ward et al.

Serial No.: 10/037,469

Filed: November 9, 2001

Conformation No.: 5187

For: NUCLEIC ACID DETECTION USING  
STRUCTURED PROBES

## INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents  
Washington, D.C. 20231

May 31, 2002


Sir:

Consideration of the cited documents and making the same of record in the prosecution of the above-noted application are respectfully requested.

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**SERIAL NO. 10/037,469**

Applicants believe that this Information Disclosure Statement is being filed in accordance with 37 C.F.R. § 1.97(b)(3), i.e., before the mailing date of the first Office Action on the merits. Therefore, no fee is believed to be due. However, the Commissioner is hereby authorized to charge any fees which may be required, or to credit any overpayment, to Deposit Account No. 14-0629.

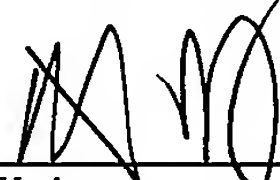
Respectfully submitted,

  
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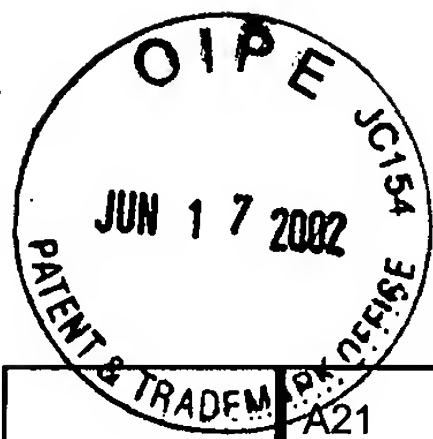
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Form PTO-1449 U.S. DEPARTMENT OF COMMERCE (Rev. 7-80) PATENT AND TRADEMARK OFFICE  LIST OF PRIOR ART CITED BY APPLICANT (Use several sheets if necessary)	ATTORNEY DOCKET NO.: 13172.0014U2	SERIAL NO. 10/037,469 CONFIRMATION NO. 5187
	APPLICANT: Ward et al.	
	FILING DATE: November 9, 2001	GROUP: 1645

U.S. PATENT DOCUMENTS							
EXAMINER INITIALS		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	A1	5,871,928	02/16/99	Fedor et al.			
	A2	5,854,033	12/29/98	Lizardi			
	A3	5,654,413	08/05/97	Brenner			
	A4	5,599,695	02/04/97	Pease et al.			
	A5	5,429,807	07/04/95	Matson et al.			
	A6	5,334,711	08/02/94	Sproat et al.			
	A7	5,198,543	03/30/93	Blanco et al.			
	A8	5,001,050	03/19/91	Blanco et al.			

FOREIGN PATENT DOCUMENTS							
	A9	WO 97/19193	05/29/97	Yale University (PCT)			

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)		
	A10	Benseler et al. Hammer-like Molecules Containing Non-Nucleoside Linkers Are Active RNA Catalysts. <i>J. Am. Chem. Soc.</i> 115:8483-8484 (1993)
	A11	Birkenmeyer et al. DNA probe amplification methods. <i>J. Virological Methods</i> 35:117-126 (1991)
	A12	Boehmer et al. Herpes Simplex Virus Type 1 ICP8: Helix-Destabilizing Properties. <i>J. Virology</i> 67(2):711-715 (1993)
	A13	Bonnet et al. Thermodynamic basis of the enhanced specificity of structured DNA. <i>Proc. Natl. Acad. Sci. USA</i> 96(11):6171-6 (1999)
	A14	Chatterjee et al. Cloning and overexpression of the gene encoding bacteriophage T5 DNA polymerase. <i>Gene</i> 97:13-19 (1991)
	A15	Cremer et al. Detection of chromosome aberrations in metaphase and interphase tumor cells by in situ hybridization using chromosome-specific library probes. <i>Hum. Genet.</i> 80(3):235-46 (1988)
	A16	Fire et al. Rolling replication of short DNA circles. <i>Proc. Natl. Acad. Sci. USA</i> 92:4641-4645 (1995)
	A17	Fu et al. Hammerhead Ribozymes Containig Non-Nucleoside Linkers Are Active RNA Catakysts. <i>J. Am. Chem. Soc.</i> 116:4591-4598 (1994)
	A18	Guo et al. Direct fluorescence analysis of genetic polymorphisms by hybridization with oligonucleotide arrays on glass supports. <i>Nucleic Acids Res.</i> 22:5456-5465 (1994)
	A19	Haaf et al. High resolution ordering of YAO contigs using extended chromatin and chromosomes. <i>Hum. Mol. Genet.</i> 3(4):629-33 (1994)
	A20	Hoy et al. Bromodeoxyuridine/DNA analysis of replication in CHO cells after exposure to UV light. <i>Mutation Research</i> 290:217-230 (1993)



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A21	Itakura et al. Synthesis and Use of Synthetic Oligonucleotides. <i>Ann. Rev. Biochem.</i> 53:323-356 (1984)
A22	Jacobsen et al. The N-Terminal Amino-Acid Sequences of DNA Polymerase I from <i>Escherichia coli</i> and of the Large and the Small Fragments Obtained by a Limited Proteolysis. <i>Eur. J. Biochem.</i> 45:623-627 (1974)
A23	Jung et al. Bacteriophage PRD1 DNA polymerase: Evolution of DNA polymerases. <i>Proc. Natl. Acad. Sci. USA</i> 84:8287-8291 (1987)
A24	Kaboord et al. Accessory proteins function as matchmakers in the assembly of the T4 DNA polymerase holoenzyme. <i>Curr. Biol.</i> 5:149-157 (1995)
A25	Kerkhof. A Comparison of Substrates for Quantifying the Signal from a Nonradiolabeled DNA Probe. <i>Anal. Biochem.</i> 205:359-364 (1992)
A26	Khrapko et al. Hybridization of DNA With Oligonucleotides Immobilized in Gel: A convenient Method For Detecting Single Base Substitutions. <i>Mol. Biol. (Mosk)(USSR)</i> 25:718-730 (1991)
A27	Kong et al. Characterization of a DNA Polymerase from the Hyperthermophile Archaea <i>Thermococcus litoralis</i> . <i>J. Biol. Chem.</i> 268:1965-1975 (1993)
A28	Landegren. Molecular mechanics of nucleic acid sequence amplification. <i>Trends Genetics</i> 9:199-202 (1993)
A29	Langer et al. Enzymatic synthesis of biotin-labeled polynucleotides: Novel nucleic acid affinity probes. <i>Proc. Natl. Acad. Sci. USA</i> 78:6633 (1981)
A30	Lesnick et al. Relative Thermodynamic of DNA, RNA, and DNA:RNA Hybrid Duplexes: Relationship with Base Composition and Structure. <i>Biochemistry</i> 34:10807-10815 (1995)
A31	Letsinger et al. Use of a Stilbenedicarboxamide Bridge in Stabilizing, Monitoring , and Photochemically Altering Folded Conformations of Oligonucleotides. <i>J. Am. Chem. Soc.</i> 117:7323-7328 (1995)
A32	Lipshutz et al. Using Oligonucleotide Probe Arrays To Access Genetic Diversity. <i>BioTechniques</i> 19:442-447 (1995)
A33	Lizardi et al. Mutation detection and single-molecule counting using isothermal rolling-circle amplification. <i>Nature Genet.</i> 19:225-232 (1998)
A34	Lyamichev et al. Polymorphism identification and quantitative detection of genomic DNA by invasive cleavage of oligonucleotide probes. <i>Nat. Biotech.</i> 17:292-296 (1999)
A35	Matsumoto et al. Primary structure of bacteriophage M2 DNA polymerase: Conserved segments within protein-priming DNA polymerases and DNA polymerase I of <i>Escherichia coli</i> . <i>Gene</i> 84:247 (1989)
A36	McGraw et al. Sequence-Dependent Oligonucleotide-Target Duplex Stabilities: Rules from Empirical Studies with a Set of Twenty-Mers. <i>Biotechniques</i> 8:674-678 (1990)
A37	Moretti et al. Enhancement of PCR Amplification Yield and Specific Using AmpliTaq Gold™ DNA Polymerase. <i>Biotechniques</i> 25:716-722 (1998)
A38	Narang et al. Chemical Synthesis of Deoxyoligonucleotides by the Modified Treister Method. <i>Methods Enzymol.</i> 65:610-620 (1980)
A39	Nielsen et al. Peptide Nucleic Acid (PNA). A DNA Mimic with a Peptide Backbone. <i>Bioconjug. Chem.</i> 5:3-7 (1994)
A40	Parra et al. High resolution visual mapping of stretched DNA by fluorescent hybridization. <i>Nature Genet.</i> 5:17-21 (1993)
A41	Pease et al. Light-generated oligonucleotide arrays for rapid DNA sequence analysis. <i>Proc. Natl. Acad. Sci. USA</i> 91(11):5022-5026 (1994)
A42	Picoult-Newberg et al. Mining SNPs From EST Databases. <i>Genome Res.</i> 9(2):167-74 (1999)
A43	Rigler et al. Differences in the Mechanism of Stimulation of T7 DNA Polymerase by Two Binding Modes of <i>Escherichia coli</i> Single-stranded DNA-binding Protein. <i>J. Biol. Chem.</i> 270:8910-8919 (1995)
A44	Ross et al. High level multiplex genotyping by MALDI-TOF mass spectrometry. <i>Nat. Biotechnol.</i> 16(13):1347-51 (1998)
A45	Ryan et al. Non-PCR-Dependent Detection of the Factor V Leiden Mutation From Genomic DNA using a Homogeneous Invader Microtiter Plate Assay. <i>Mol. Diagn.</i> 4:135-144 (1999)



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JUN 19 2002

ATTORNEY DOCKET NO. 13172.0014U2

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	A46	Rychlik et al. Optimization of the annealing temperature for DNA amplification <i>in vitro</i> . <i>Nucleic Acids Res.</i> 18:6409-6412 (1990)
	A47	Sambrook et al. <i>Molecular Cloning: A Laboratory Manual</i> , 2 <sup>nd</sup> Edition (Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY) Chapters 5, 6 (1989)
	A48	Schena et al. Quantitative Monitoring of Gene Expression Patterns with s Complementary DNA Microarray. <i>Science</i> 270:467-470 (1995)
	A49	Shi et al. Technologies for Detecting Genetic Polymorphisms in Pharmacogenomics. <i>Mol. Diagn.</i> 4(4):343-51 (1999)
	A50	Siegel et al. A Novel DNA Helicase from Calf Thymus. <i>J. Biol. Chem.</i> 267:13629-13635 (1992)
	A51	Skaliter et al. Rolling circle DNA replication <i>in vitro</i> by a complex of herpes simplex virus type 1-encoded. <i>Proc. Natl. Acad. Sci. USA</i> 91(22):10665-10669 (1994)
	A52	Stimpson et al. Real-time detection of DNA Hybridization and melting on oligonucleotide arrays by optical wave guides. <i>Proc. Natl. Acad. Sci. USA</i> 92:6379-6383 (1995)
	A53	Tabor et al. Selective Inactivation of the Exonuclease Activity of Bacteriophage T7 DNA Polymerase by <i>in Vitro</i> Mutagenesis. <i>J. Biol. Chem.</i> 264:6447-6458 (1989)
	A54	Tabor et al. Selective Oxidation of the Exonuclease Domain of Bacteriophage T7 DNA Polymerase. <i>J. Biol. Chem.</i> 262:15330-15333 (1987)
	A55	Tang et al. Chip-based genotyping by mass spectrometry. <i>Proc. Natl. Acad. Sci. USA</i> 96(18):10016-20 (1999)
	A56	Tsurumi et al. Functional Interaction between Epstein-Barr Virus DNA Polymerase Catalytic Subunit and Its Accessory Subunit In Vitro. <i>J. Virology</i> 67(12):7648-7653 (1993)
	A57	Tyagi et al. Molecular Beacons: Probes that Flouresce upon Hybridization. <i>Nat. Biotech.</i> 14(3):303-308 (1996)
	A58	Vet et al. Multiplex detection of four pathogenic retroviruses using molecular beacons. <i>Proc. Natl. Acad. Sci. USA</i> 96(11):6394-9 (1999)
	A59	Vogelstein et al. Supercoiled Loops and Eucaryotic DNA Replication. <i>Cell</i> 22(1.1):79-85 (1980)
	A60	Wang et al. Large-Scale Identification, Mapping, and Genotyping of Single-Nucleotide Polymorphisms in the Human Genome. <i>Science</i> 280(5366):1077-82 (1998)
	A61	Wansick et al. Flourescent Labeling of Nascent RNA Reveals Transcription by RNA Polymerase II in Domains Scattered Throughout the Nucleus. <i>J. Cell Biology</i> 122:283-293 (1993)
	A62	Wiegant et al. High-resolution <i>in situ</i> hybridization using DNA halo preparations. <i>Hum. Mol. Genet.</i> 1(8):587-91 (1992)
	A63	Yu et al. Cyanine dye dUTP analogs foe enzymatic labeling for DNA probes <i>Nucleic Acids Res.</i> 22:3226-3232 (1994)
	A64	Yunis et al. The Characterization of High-Resolution G-Banded Chromosomes of Man. <i>Chromosoma</i> 67(4):293-307 (1978)
	A65	Zhu et al. Purification and characterization of PRD1 DNA polymerase. <i>Biochim. Biophys. Acta.</i> 1219:267-276 (1994)
	A66	Zijderveld et al. Helix-Destabilizing Properties of the Adenovirus DNA-Binding Protein. <i>J. Virol.</i> 68(2):1158-1164 (1994)

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